

(No Model.)

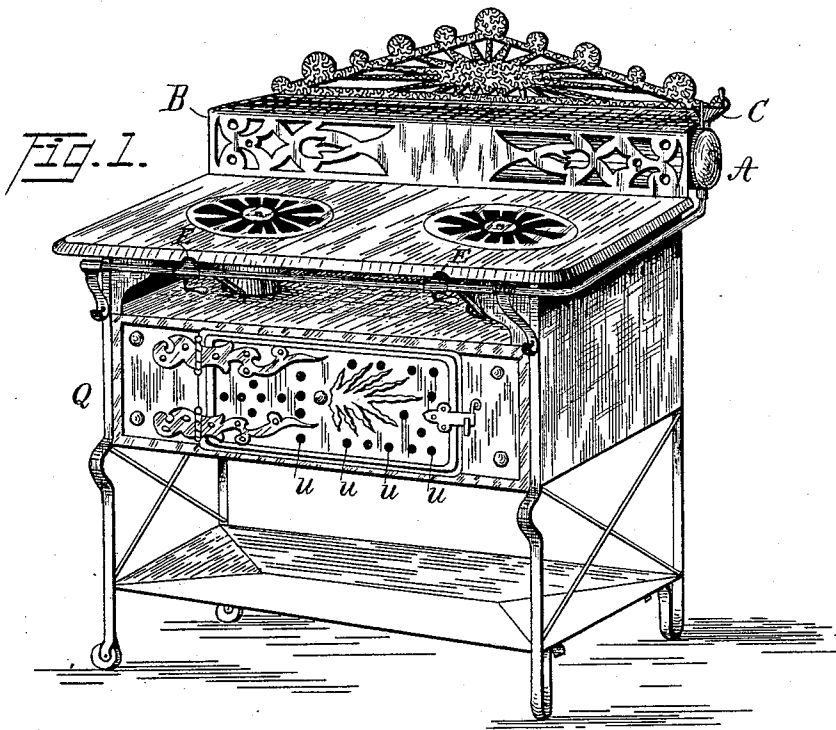
3 Sheets—Sheet 1.

H. RUPPEL.

STOVE FOR BURNING HYDROCARBON OIL AND ITS VAPORS.

No. 471,399.

Patented Mar. 22, 1892.



Witnesses.
W. A. Biddle
Henry Ford

Inventor.
H. Ruppel
by W. H. Burdick atty.

(No Model.)

3 Sheets—Sheet 2.

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Fig. 2.

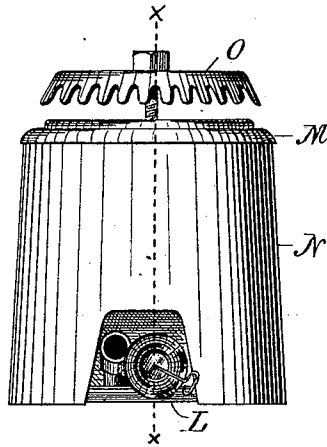


Fig. 3.

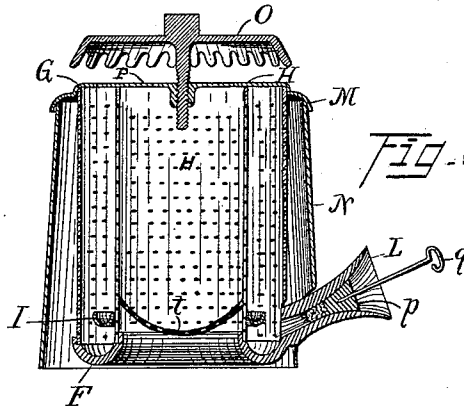


Fig. 4.

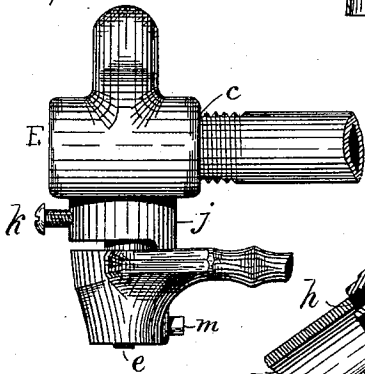
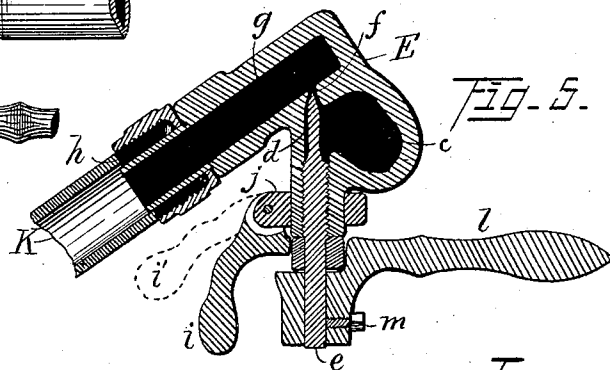


Fig. 5.



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(No Model.)

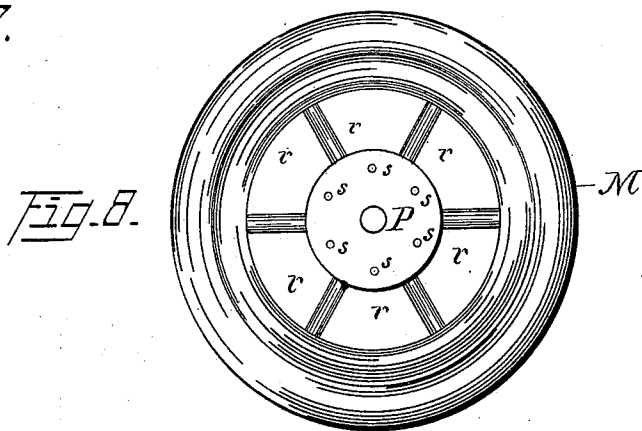
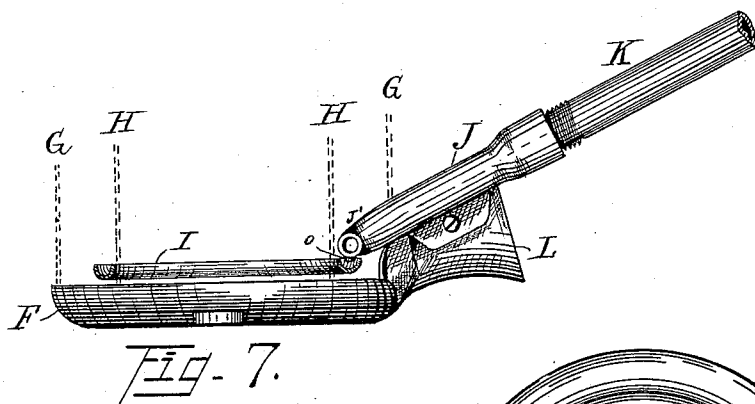
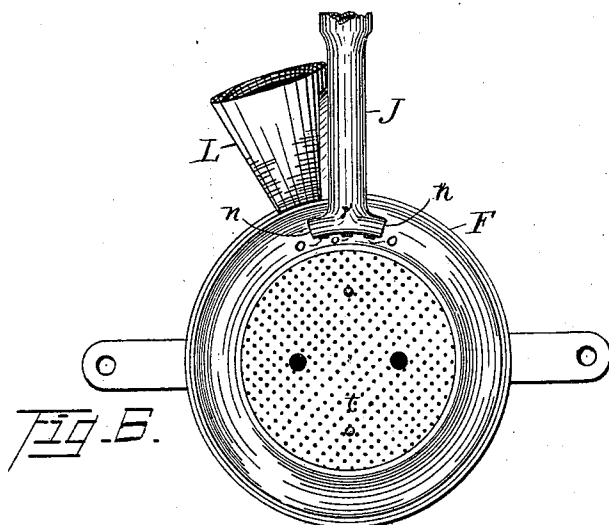
3 Sheets—Sheet 3.

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W. A. Biddle,
Henry Ford

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UNITED STATES PATENT OFFICE.

HENRY RUPPEL, OF CLEVELAND, OHIO, ASSIGNOR TO THE DANGLER STOVE
AND MANUFACTURING COMPANY, OF SAME PLACE.

STOVE FOR BURNING HYDROCARBON OIL AND ITS VAPORS.

SPECIFICATION forming part of Letters Patent No. 471,399, dated March 22, 1892.

Application filed June 20, 1891. Serial No. 396,910. (No model.)

To all whom it may concern:

Be it known that I, HENRY RUPPEL, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and Improved Stove for Burning Hydrocarbon Oil and its Vapors, of which the following is a full and complete description.

My invention relates to the peculiar construction and arrangement of the burners and their attachments of a stove whereby hydrocarbon vapor or gas is generated without the aid of a sub-light.

That the invention may be seen and fully understood by others, reference will be had to the following specification and annexed drawings, forming a part thereof.

Figure 1 is a perspective view of the improved stove. Fig. 2 is a detached view of one of the burners; and Fig. 3 is a longitudinal vertical section of same on line *x x*, Fig. 3. Fig. 4 is a detached view of one of the valves, full size. Fig. 5 is a vertical section of said valve; and Figs. 6, 7, and 8 are detached views of parts of the burner, hereinafter fully described.

Like letters of reference designate like parts in the specification and drawings.

The tank A is located at the back of the stove under a shelf B. It is provided with a filling-funnel C, and from it runs a supply-pipe D.

I will now describe the valve E, Figs. 1, 4, and 5. (Best shown in Figs. 4 and 5.) Referring to said figures, the supply-pipe is connected at *c*, which is in open relation with the chamber *d*, surrounding the needle *e*, seated at *f*. Thus when the valve is open a free communication is formed with the burner through the stem *g*, which is attached to the burner-supply tube at the packing-ring *h*. A stop *i*, Fig. 5, is pivoted to a governing-sleeve *j*, which circumscribes the stem-casing of the valve. The sleeve *j* is so adjusted by means of the set-screw *k*, Fig. 4, that the stop *i* will admit the opening of the needle-valve just the right distance for the proper supply of oil for the ordinary flame. By raising the stop to the position shown by dotted lines *i'*, Fig. 5, the valve can be opened to its full ca-

capacity, and consequently increase the flame and intensify the heat thereof. The lever *l* is rigidly attached to the needle-stem *e* by a set-screw *m* or any suitable means for attachment.

The burners are constructed as follows: A circular primary trough F, Figs. 3, 6, and 7, is provided with two perforated chimneys G and H rising therefrom, G on the outer border of the trough and H on the inner border thereof. Circumscribing the inner chimney H, just above the trough F, a sufficient distance to allow perforations in the chimneys between the two troughs, is a secondary trough I, as shown in the drawings. The trough I is smaller than the trough F. Into the smaller or secondary trough the oil flows, there being a T-nozzle J, Figs. 6 and 7, connected with the burner-supply tube K and open at the two ends *n n* of the cross-piece J', Fig. 6. The said cross-piece is curved to conform with the curvature of the trough I, and is also provided with a series of openings *o o o* on the under side thereof, through which the oil flows into the trough I. A flaring tube L, Figs. 2, 3, 6, and 7, is attached to the side of the trough F for the purpose of lighting, said tube being provided with a stopper *p*, Fig. 3, having a handle *q* attached thereto and preferably covered with a coating of asbestos or its equivalent on its interior terminal. The oil flowing through the T-nozzle J into the secondary trough I the heavy vapor settles down into the trough F under the trough I, when the stopper *p* is removed and a light applied in the lighting-tube L, igniting the vapor in the trough F, the burning of which heats the ring or trough I, thus generating the gas in the chamber formed between the walls of the two chimneys G and H. The trough F also serves to catch the overflow from the trough I should there be any. The cap M, Figs. 2, 3, and 8, circumscribes the upper terminals of the chimneys G and H and also the outer casing N. This cap is open between the two chimneys, as shown at *r r r r*, Fig. 8. A scalloped deflector O, Figs. 2 and 3, is attached to the burner above the cap M. The flame, rising through the openings *r r r r*, comes in contact with the said deflector O and

is evenly distributed. The form of the deflector also prevents any overflow of material cooking from entering the interior of the burner.

A disk P, Fig. 8, provided with perforations 5 s s s s, covers the central portion of the burner or the interior perforated chimney H. Arranged in the lower part of said chimney H is a perforated disk *t*, which is preferably 10 concavo-convex in form, as shown by dotted lines in Fig. 3. The purpose of this disk is to equalize the distribution of air passing up through the center of the burner. The air above mentioned is supplied by an opening 15 or openings under the burners in the pan or shelf on which said burners rest or otherwise.

As a great amount of heat passes downward from the burners, a warming-oven Q, Fig. 1, may be arranged in connection with the stove, 20 in which case the said oven will be perforated, as shown at u u u u, or it may be open on the under side.

This improved stove is particularly adapted for the use of gasoline, although petroleum may be used therein.

25 What I claim, and desire to secure by Letters Patent, is—

1. In a vapor-stove, the burners composed of the two circular troughs F and I, one superimposed above the other, in combination 30 with two perforated chimneys G and H, and the cap M, operating conjointly with the deflector O and T-nozzle J, arranged substantially in the manner as and for the purpose specified.

35 2. In a vapor-stove, in combination, a T-nozzle attached to the burner-supply tube, the cross-piece thereof curved to conform to the curvature of the trough I and provided with openings over said trough, arranged in the 40 manner as and for the purpose described.

3. The combination, in a vapor-burner, of

an inner and outer perforated chimney, a circular trough F, the inner chimney circumscribed by a circular trough I above the said 45 trough F, and a T-nozzle with openings into said trough I, arranged substantially in the manner and for the purpose set forth.

4. In a vapor-burner, the combination of the two circular troughs F and I, and the T-nozzle J, with the lighting-tube L, opening 50 into said trough F and provided with a stopper *p*, whereby the ignition of the gas or vapor in the troughs F and I is facilitated, substantially in the manner specified.

5. In combination with the inner and outer 55 chimneys G and H, the described lower perforated disk *t* and the upper perforated disk P, arranged as specified, whereby the distribution of air within the interior chimney is equalized, substantially as set forth. 60

6. In a vapor-burner, the scalloped deflector O, superimposed above the perforated chimneys G and H, and the cap M, in combination 65 with said chimneys, the two circular troughs, and the nozzle J, arranged and operating substantially in the manner as and for the purpose set forth.

7. The combination, with a vapor-stove, of a valve-casing, a turning valve operating therein and provided with a lever-handle *l*, a 70 sleeve adjustable rotatably on said casing, and a stop pivoted to said sleeve and arranged when in its normal position to arrest the movement of said handle, but adapted to be moved out of the path of said handle when 75 desired, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY RUPPEL.

Witnesses:

W. H. BURRIDGE,
T. F. GRISWOLD.